We claim:

1. A photodetector comprising two separated silicide regions on a substrate and a waveguide of a silicon-based material formed between side-walls of said two separated silicide regions.
2. The photodetector according to claim 1, wherein said two separated silicide regions serve as electrodes.
3. The photodetector according to claim 1, wherein said silicon-based material is one of a group of materials comprising: silicon, amorphous silicon, silicon germanium, and amorphous silicon germanium.
4. The photodetector according to claim 1, wherein said two separated silicide regions are produced using a metal from a group of metals comprising: nickel, platinum, tungsten, and cobalt.
5. The photodetector according to claim 1, wherein said photodetector has a tapered input waveguide.
6. A method of producing a photodetector having a waveguide of a silicon-based material, comprising steps of:

a/ depositing a metal layer on a silicon-based material layer of a substrate;

b/ etching to selectively remove unwanted regions of said metal layer; and

c/ heating said metal layer to induce a metal-silicon reaction to produce at least two separated silicide regions, said at least two separated silicide regions forming said waveguide of silicon-based material therebetween.

7. The method of producing a photodetector according to claim 6, wherein said substrate is a silicon-on-insulator (SOI) substrate.
8. The method of producing a photodetector according to claim 6, wherein said silicon-based material is one of a group of materials comprising: silicon, amorphous silicon, silicon germanium, and amorphous silicon germanium.
9. The method of producing a photodetector according to claim 6, wherein said two separated silicide regions are produced using a metal belonging to a group of metals comprising: nickel, platinum, tungsten, and cobalt.

10. The method of producing a photodetector according to claim 6, wherein said silicon-based material layer is made of silicon and epitaxially grown silicon germanium superlattices.
11. The method of producing a photodetector according to claim 6, wherein said silicon-based material layer is made of silicon germanium alloy and a layer of silicon.
12. A method of producing a photodetector having a waveguide of a silicon-based material, comprising steps of:

a/ forming a ridge in a silicon-based material layer of a substrate and applying a mask on top of said ridge;

b/ depositing a metal layer on said silicon-based material layer of said substrate;

c/ heating said metal layer to induce a metal-silicon reaction to produce at least two separated silicide regions, said at least two separated silicide regions forming said waveguide therebetween; and

d/ etching to selectively remove unwanted metal from said mask without affecting said at least two separated silicide regions.

13. The method of producing a photodetector according to claim 12, wherein said substrate is a silicon-on-insulator (SOI) substrate.
14. The method of producing a photodetector according to claim 12, wherein said silicon-based material is one of a group of materials comprising: silicon, amorphous silicon, silicon germanium, and amorphous silicon germanium.
15. The method of producing a photodetector according to claim 12, wherein said two separated silicide regions are produced using a metal belonging to a group of metals comprising: nickel, platinum, tungsten, and cobalt.
16. The method of producing a photodetector according to claim 12, wherein said silicon-based material layer is made of silicon and epitaxially grown silicon germanium superlattices.

17. The method of producing a photodetector according to claim 12, wherein said silicon-based material layer is made of silicon germanium alloy and a layer of silicon.